42-045-00070
PA000293037
Bruce Augustine

Monroe Energy, LLC
4101 Post Road
Trainer, PA 19061
(610) 364-8000

January 31, 2018

Via FedEx: 7711 2690 4440

Ms. Erin Willard
Director, Air Protection Division
U.S. EPA, Region III
Mail Code 3AP20
1650 Arch Street
Philadelphia, Pa 19103-2029

FEB 0 2 2018

Re: Alternative Monitoring Plan for Compliance with 40 CFR 60 Subpart Ja – Standards of Performance for Petroleum Refineries
Monroe Energy, LLC – Trainer Refinery

Monroe Energy, LLC's Trainer Refinery ("Monroe") is submitting this letter and the enclosed documentation as our Application for Approval of an Alternative Monitoring Plan (AMP) for a temporary flare that will be used for a refinery turnaround. The AMP application requests an approval for an alternative approach for compliance with the flare monitoring requirements listed in 40 CFR Parts 60.107a(a)(2), 60.107a(e), and 60.107a(f).

Monroe is requesting exemption from H_2S and TRS monitoring requirements while the temporary flare is in service. Monroe is also requesting the use of a flow meter that satisfies all of the requirements specified in §60.107a(f) with the exception of online pressure correction. The approval of this AMP Application would allow sensible monitoring of the temporary flare that will be used for only a short duration. Finally, Monroe would like to use this AMP for not only the upcoming turnaround, but for all other future full-refinery turnarounds where the Main Flare is taken out of service and the specified process conditions remain the same.

Should you have any questions or comments regarding this application, please contact Mr. Matthew Torell, P.E., Environmental Leader, at (610) 364-8399.

Sincerely,

Mr. Matthew Torell, P.E.,
Environmental Leader

Attachment 1 - TEMPORARY TURN AROUND FLARE ALTERNATIVE MONITORING PLAN APPLICATION

Via FedEx: 7711 2698 7766

Mr. James Rebarchak
Commonwealth of Pennsylvania
Department of Environmental Protection
Southeast Regional Office
2 East Main Street
Norristown, PA 19401

Attachment 1 - TEMPORARY TURN AROUND FLARE ALTERNATIVE MONITORING PLAN APPLICATION

TEMPORARY TURN AROUND FLARE
ALTERNATIVE MONITORING PLAN APPLICATION
Monroe Energy, LLC
January 2018

I. Introduction

The Monroe Energy, LLC (Monroe) Trainer Refinery operates a Main Flare (Source ID 103) in conjunction with a flare gas recovery system. The refinery will conduct a full facility turnaround. During this time, the Main Flare will need to be removed from service for maintenance. The flare gas recovery system will shut down as all other process units will not be operating. Monroe has a Back-up Flare (Source ID 122) that has been historically used for this scenario. However, the Back-up Flare is inoperable. Therefore, Monroe plans to use a temporary flare to protect equipment that could release to the flare while the Main Flare is out of service. The temporary flare will be subject to New Source Performance Standards 40 CFR Part 60, Subpart Ja (NSPS Ja) once it is brought online. NSPS Ja requires H_2S monitoring (§60.107a(a)(2)), sulfur monitoring for assessing root cause analyses (§60.107a(e)), and precise flow monitoring (§60.107a(f)).

Monroe submits this application for an Alternative Monitoring Plan (AMP) to propose simplified NSPS Ja monitoring requirements because:

1. The temporary flare will be operating for a short duration (Approximately 3-7 weeks) pursuant to §60.13(i)(2) because the affected facility will be operated infrequently. This scenario is only required for full refinery turnarounds (approximately once every five years).
2. Any vent gas sent to the flare during the turnaround will be inherently low in sulfur. The only scenario that would allow equipment containing sulfur compounds to vent to the flare would be a refinery fire. This is highly unlikely given that the process units will not be operating. Should a fire and release to the flare occur, Monroe will perform engineering calculations to determine the amount of SO_2 discharged.
3. Flow monitoring on the temporary flare would meet all of the §60.107a(f) requirements with the exception of online pressure correction.

Monroe is requesting exemption from H_2S and total reduced sulfur (TRS) monitoring requirements while the temporary flare is in service. Monroe is also requesting the use of a flow meter that satisfies all of the requirements specified in §60.107a(f) with the exception of online pressure correction. Finally, Monroe would like to use this AMP for not only the upcoming turnaround, but for all other future full-refinery turnarounds where the Main Flare is taken out of service. The NSPS Ja-related requests of this AMP could only be applied to future turnarounds should the vent gas, process conditions, and flare monitoring remain the same. Please see specific details in the following sections.

- Only a refinery fire could cause the release of non-inherently low in sulfur vent gas to the flare header. This scenario is unlikely as the process units will not be operating. Monroe will perform engineering calculations to determine the amount of SO_2 emitted from the flare should such a release occur.
- It is logistically infeasible to use the existing H_2S and TRS monitors from the Main Flare due to scheduling and geographical constraints.

IV. Flow Monitoring

NSPS Ja requires continuous flow monitoring for flares:

> §60.107a(f) - *Flow monitoring for flares. Except as provided in paragraphs (f)(2) and (h) of this section, the owner or operator of an affected flare subject to §60.103a(c) through (e) shall install, operate, calibrate and maintain, in accordance with the specifications in paragraph (f)(1) of this section, a CPMS to measure and record the flow rate of gas discharged to the flare.*

Monroe is requesting permission to use a flowmeter that meets all of the NSPS Ja requirements with the exception of online pressure correction. The proposed flowmeter is a Thermal Mass Flow Meter (Model 62-9/9500P). Monroe believes that this is appropriate because:

- Pressure fluctuations of ± 10 atm have no impact on the accuracy of the proposed meter because it is a mass flowmeter. Also, pressure in the flare header will be relatively constant because equipment protected by the temporary flare is not expected to vent. Only natural gas sweep and pilot gas should be flared.
- It is logistically infeasible to use the flowmeter that is installed on the Main Flare due to scheduling and geographical constraints.

The table below compares the proposed flowmeter specifications against the NSPS Ja regulatory requirements.

Comparison of the Proposed Flowmeter to §60.107a(f)(1) Requirements	
NSPS Ja Requirement	**Proposed Flowmeter Specifications**
(i) Locate the monitor in a position that provides a representative measurement of the total gas flow rate.	The flowmeter will be installed in location that provides a representative measurement of the total gas flowrate.
(ii) Use a flow sensor meeting an accuracy requirement of ±20 percent of the flow rate at velocities ranging from 0.1 to 1 feet per second and an accuracy of ±5 percent of the flow rate for velocities greater than 1 feet per second.	The flowmeter meets the NSPS Ja Accuracy requirements.
(iii) Use a flow monitor that is maintainable online, is able to continuously correct for temperature and pressure and is able to record flow in standard conditions (as defined in §60.2) over one-minute averages.	The flowmeter satisfies this requirement with the exception of online pressure correction. However, pressure fluctuations of ± 10 atm do not affect the meter accuracy.

VI. Conclusion

The approval of this AMP application would allow sensible monitoring of the temporary flare that will be used for only a short duration. H_2S and sulfur monitoring provides no benefit because only inherently low in sulfur sweep natural gas is expected to be flared. Continuous flow monitoring will be in place and satisfies all of the NSPS Ja requirements with the exception of online pressure correction. Therefore, it is unnecessary to install such a precise meter for a limited use flare. If approved, the AMP would apply for the upcoming turnaround and all future full-refinery turnarounds if the conditions outlined in this AMP remain the same.

Monroe Energy, LLC
Turnaround Flare AMP
Worst-Case Emergency Relief Scenario Details
Appendix A - Table 1

Relief Case	Propane Storage Fire	Boiler House Fire	Platformer Fire
Estimated Flow (mscfm)	7.5	3.3	1.7
Mole Fractions of Relief Cases			
Propane	100.0%	52.5%	0.0%
n-Heptane	0.0%	0.0%	100.0%
n-Pentane	0.0%	1.0%	0.0%
i-Butane	0.0%	6.0%	0.0%
n-Butane	0.0%	9.3%	0.0%
n-Hexane	0.0%	0.3%	0.0%
Propylene	0.0%	30.5%	0.0%
1-Butene	0.0%	0.4%	0.0%
Hydrogen Sulfide	0.0%	0.0%	0.0%
Stream Characteristics			
Pressure (psia)	21.85	20.11	20.12
Temperature (°F)	82.7	116	335.53
M.W.	44.09	46.25	100.21